

КИЇВСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ УКРАЇНИ
«КИЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ ІМЕНІ ІГОРЯ СІКОРСЬКОГО»

Факультет прикладної математики
Кафедра програмного забезпечення комп'ютерних систем

Лабораторна робота №3
із дисципліни «Методи організації пошуку інформації»

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Постановка завдання

Варіант 12

Предметна галузь: програмування

Результати роботи розробленої програми

The screenshot shows a web application interface for managing programming language documents. On the left, there is a sidebar with filters and search options. The main area displays a table of programming languages.

Filters and Queries

- Date creation range:** Date from [] - Date to []
- Amount of users range:** From [] - To []
- Term search (programming language):** []
- Regex search (paradigm):** []
- Full text search (match for selected field):** Description []
- Buttons:** CLEAR, APPLY, DELETE INDEX

| Programming language | Paradigm | Date creation | Amount of users | Description | History | Usage |
|----------------------|---|---------------|-----------------|--|--|--|
| JavaScript | <ul style="list-style-type: none">event-drivenfunctionalimperativeproceduralobject-oriented | 1995-12-04 | 20000000 | JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM). The most popular runtime system is Node.js. JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications. | During these formative years of the Web, web pages could only be static, lacking the capability for dynamic behavior after the page was loaded in the browser. There was a desire in the flourishing web development scene to remove this limitation, so in 1995, Netscape decided to add a scripting language to Navigator. They pursued two routes to achieve this: collaborating with Sun Microsystems to embed the Java programming language, while also hiring Brendan Eich to embed the Scheme language. | JavaScript has several different frameworks for developing web and mobile apps. JavaScript can be utilized to develop games for web browsers. Using JavaScript's runtime environment, Node.js, developers can create server-side applications. The most common example describing what JavaScript is used for involves delivering an interactive user experience. JavaScript is a paramount technology for front-end development. JavaScript has the libraries to support development for AI-related projects as well. |
| Java | <ul style="list-style-type: none">genericobject-oriented (class-based)functionalimperativereflectiveconcurrent | 1995-05-23 | 12700000 | Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of the underlying computer architecture. The syntax of Java is similar to C and C++, but has fewer low-level facilities than either of them. The Java runtime provides dynamic capabilities that are typically not available in traditional compiled languages. | Java was originally developed by James Gosling at Sun Microsystems. It was released in May 1995 as a core component of Sun Microsystems' Java platform. The original and reference implementation Java compilers, virtual machines, and class libraries were originally released by Sun under proprietary licenses. | Java is a great choice if you want to study graphics and game development from the ground up. Java is a well-known server-side programming language that is often used for constructing web applications. Developers often regard Java as the best language for IoT device development. Java is the official programming language for Android development. |

Рис. 1. Список документів з новими полями типу text (Description, History, Usage) та випадаючий список і поле для введення запиту для повнотекстового пошуку

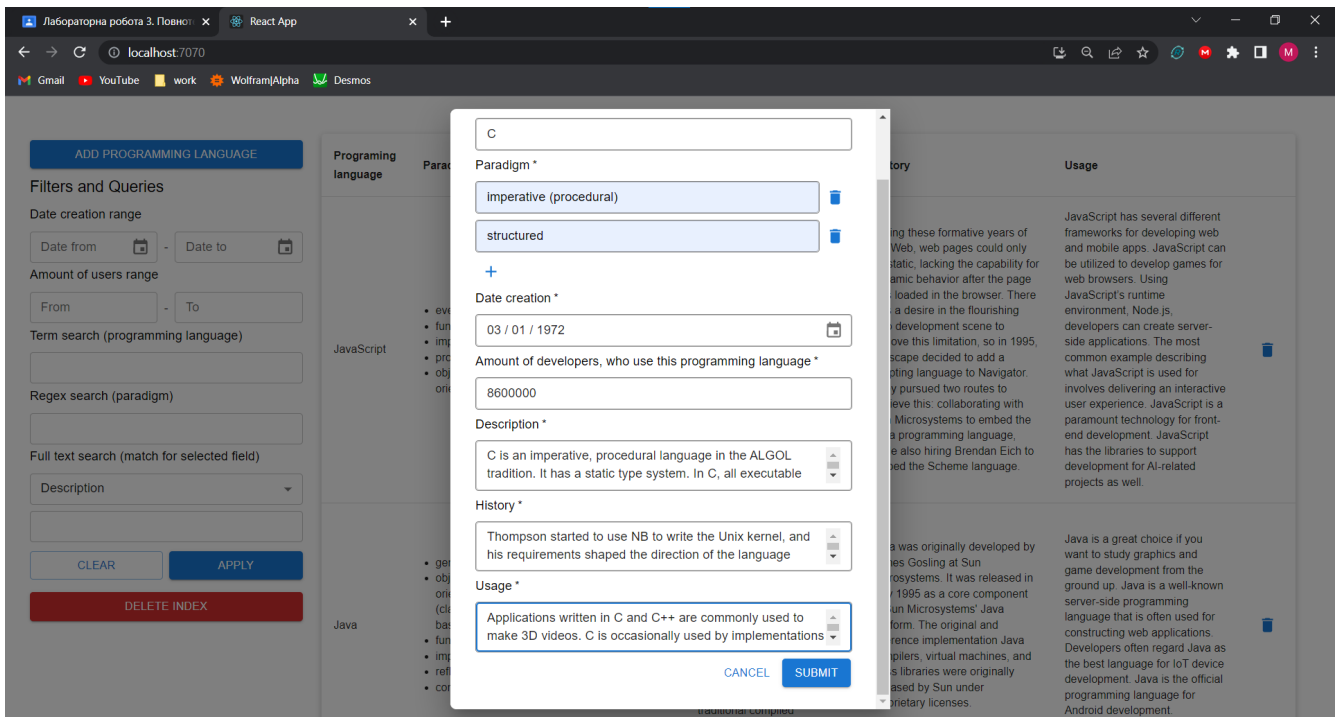


Рис. 2. Форма створення документу з новими полями типу text
(Description, History, Usage)

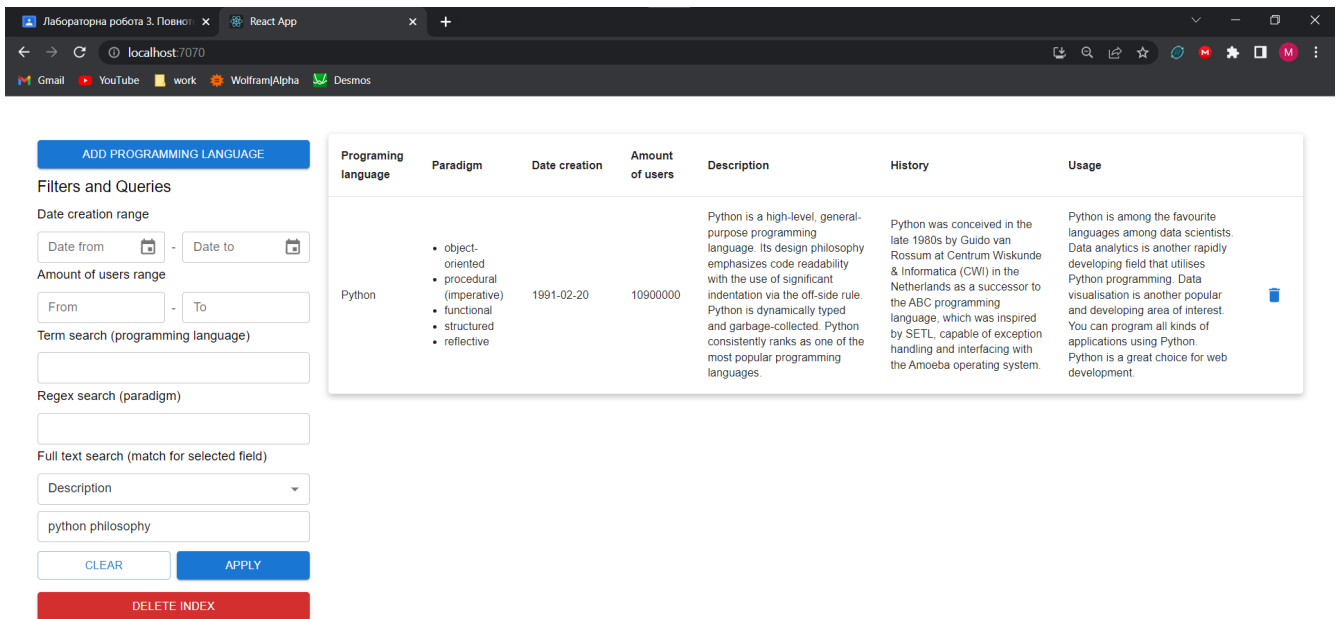


Рис. 3. Виконання повнотекстового пошуку за полем Description
(стандартний аналізатор Elasticsearch)

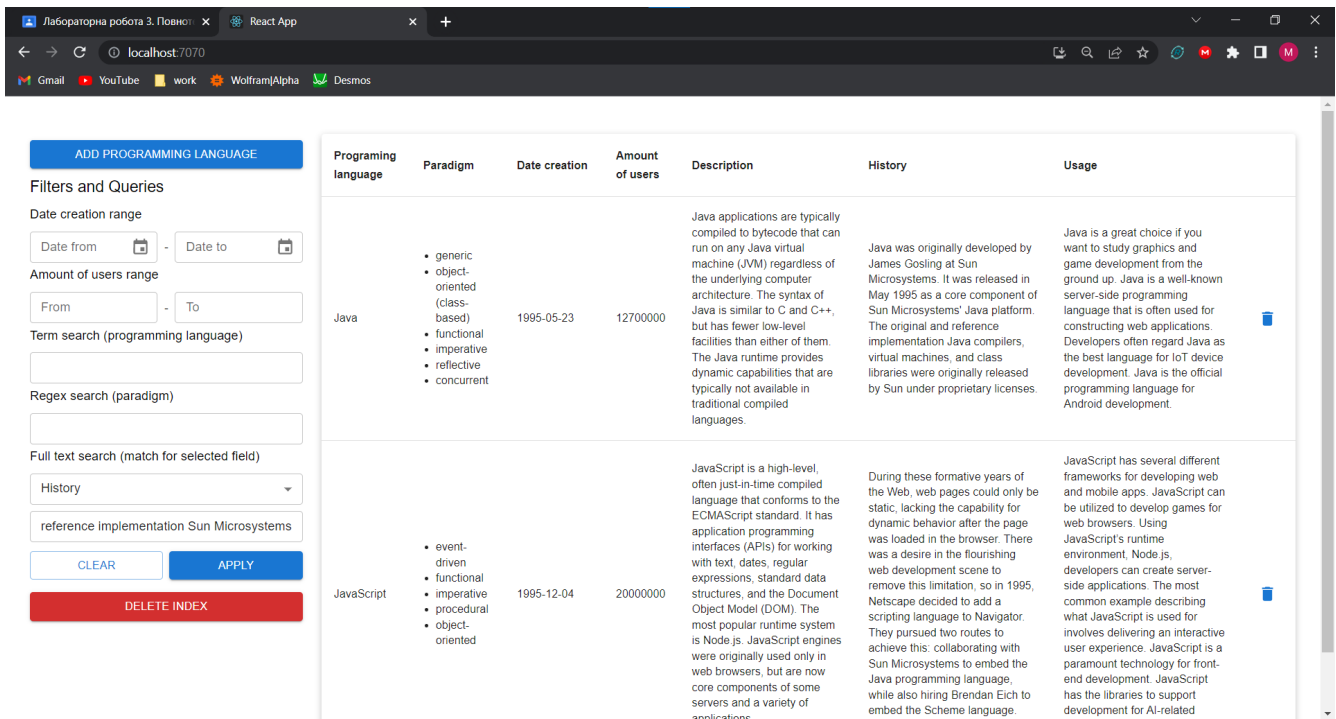


Рис. 4. Виконання повнотекстового пошуку за полем History (вбудований аналізатор Elasticsearch для англійської мови)

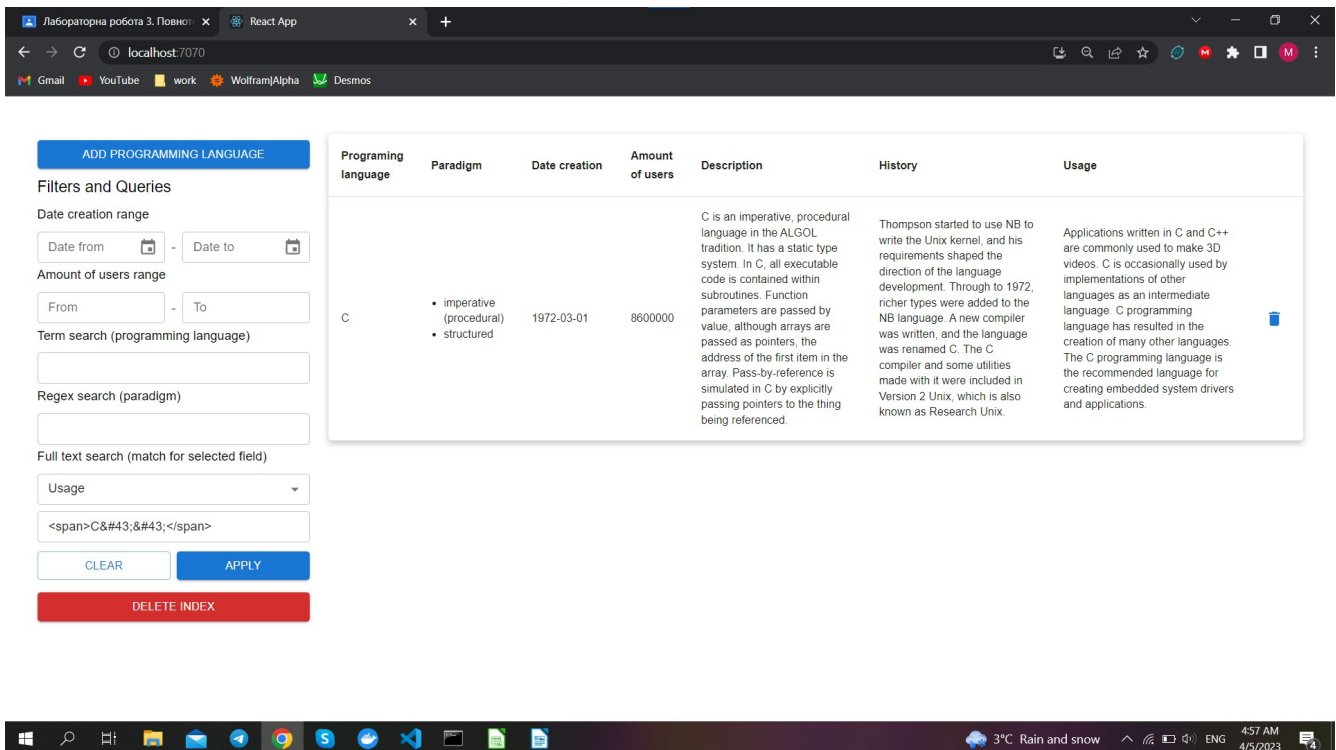


Рис. 5. Виконання повнотекстового пошуку за полем Usage (користувачський аналізатор, фільтр символів – html_strip)

ADD PROGRAMMING LANGUAGE

Filters and Queries

Date creation range

Date from

-

Date to

Amount of users range

From

-

To

Term search (programming language)

Regex search (paradigm)

Full text search (match for selected field)

Usage

▼

js 3d library

CLEAR

APPLY

DELETE INDEX

| Programing language | Paradigm | Date creation | Amount of users | Description | History | Usage |
|---------------------|---|---------------|-----------------|--|--|--|
| JavaScript | <ul style="list-style-type: none"> event-driven functional imperative procedural object-oriented | 1995-12-04 | 20000000 | JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM). The most popular runtime system is Node.js. JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications. | During these formative years of the Web, web pages could only be static, lacking the capability for dynamic behavior after the page was loaded in the browser. There was a desire in the flourishing web development scene to remove this limitation, so in 1995, Netscape decided to add a scripting language to Navigator. They pursued two routes to achieve this: collaborating with Sun Microsystems to embed the Java programming language, while also hiring Brendan Eich to embed the Scheme language. | JavaScript has several different frameworks for developing web and mobile apps. JavaScript can be utilized to develop games for web browsers. Using JavaScript's runtime environment, Node.js, developers can create server-side applications. The most common example describing what JavaScript is used for involves delivering an interactive user experience. JavaScript is a paramount technology for front-end development. JavaScript has the libraries to support development for AI-related projects as well. |
| C | <ul style="list-style-type: none"> imperative (procedural) structured | 1972-03-01 | 8600000 | C is an imperative, procedural language in the ALGOL tradition. It has a static type system. In C, all executable code is contained within subroutines. Function parameters are passed by value, although arrays are passed as pointers, the address of the first item in the array. Pass-by-reference is simulated in C by explicitly passing pointers to the thing | Thompson started to use NB to write the Unix kernel, and his requirements shaped the direction of the language development. Through to 1972, richer types were added to the NB language. A new compiler was written, and the language was renamed C. The C compiler and some utilities made with it were included in Version 2 Unix, which is also known as Research Unix | Applications written in C and C++ are commonly used to make 3D videos. C is occasionally used by implementations of other languages as an intermediate language. C programming language has resulted in the creation of many other languages. The C programming language is the recommended language for creating embedded system drivers and applications. |

Рис. 6. Виконання повнотекстового пошуку за полем Usage
(користувачський аналізатор, фільтри токенів: lowercase, stemmer, synonym)

Висновки

При виконанні лабораторної роботи було доповнено інформаційно-пошукову систему, реалізовану в рамках другої лабораторної роботи, можливістю повнотекстового пошуку.

Для документів було додано поля Description, History та Usage типу text. Для цих полів було додано можливість повнотекстового пошуку за допомогою запиту match та заданих аналізаторів для кожного з них.

Для поля Description було додано стандартний аналізатор Elasticsearch. Для поля History – вбудований аналізатор Elasticsearch для англійської мови. Для поля Usage було використано користувацький аналізатор, який використовує фільтр символів html_strip, а також фільтри токенів: lowercase, stemmer та synonym.